

**U.S. National Work Group
for the
Development of Commercial Hydrogen Measurement Standards**

December 15, 2009

**Joint Device Standards Subcommittee (DSS) and Fuel Specifications Subcommittee (FSS)
Tele/Web Conference Meeting**

AGENDA

Time: Tuesday, December 15, 2009/3:00 p.m. – 4:30 p.m. ET-USA & Canada (GMT - 05:00)

Meeting Name: H2 U.S. National Work Group December 15, 2009 Tele/Web Conference Meeting

NOTE: Please log into the web site first. On the attendee list click on the telephone icon and have the system call your telephone number. If that process does not work dial the number and enter the pass code below.

To join the meeting online: <http://nist.na6.acrobat.com/hydrogenusnwg/>

Call-In Telephone Number: 1-877-685-5350

Call-In Password: 908127

Audio Conference Only: *6 to MUTE or UNMUTE

This meeting is sponsored by the U.S. Department of Energy and U.S. Department of Commerce's National Institute of Standards and Technology.

Purpose: The U.S. National Work Group (USNWG) is meeting to continue its work to promote the establishment of a comprehensive set of (1) design, accuracy, installation, use, and method of sale requirements, (2) test procedures, and (3) quality standards for hydrogen fuel and equipment used in hydrogen measurements for vehicle and other refueling applications.

ATTACHMENTS:

Appendix A Draft Summary of the April 2009 USNWG Meeting

Appendix B Draft Summary of the August 2009 USNWG Meeting

Appendix C Preliminary USNWG's Responses to Input on the Draft Hydrogen Codes from the Fall 2009 Regional Weights and Measures Associations

Appendix D Draft 5.0 of the NIST Handbook 44 Hydrogen Gas-Measuring Devices Code

Appendix E Draft 3.0 of the NIST Handbook 130 Uniform Laws and Regulations and Hydrogen Fuel Quality Codes

AGENDA TOPICS

3:00 P.M. (ET)

(1) Welcome Current/New Members and Roll Call

New members of the USNWG and visitors will be welcomed, the meeting is called to order, time for a roll call, and the meeting's purpose is reviewed. The collaborative work by the meeting's sponsors will be recognized. New participants will be invited to provide their name, affiliation, and state their specific area of interest in the work to develop hydrogen measurement standards.

(2) Administrative Business

The USNWG will discuss and decide on procedures for managing and documenting its technical work. The following item(s) will be addressed:

(a) Approve the Summary of the April 2009 USNWG Meeting (see Appendix A)

A draft summary of the April 28-30, 2009 USNWG in-person meeting (CaFCP, West Sacramento, CA) was emailed on December 12, 2009 to the group for its review. The USNWG will discuss any modifications to the summary and vote to approve the summary.

(b) Approve the Summary of the August 2009 USNWG Meeting (see Appendix B)

A draft summary of the August 11-13, 2009 USNWG in-person meeting (NIST, Gaithersburg, MD) was emailed on December 12, 2009 to the group for its review. The USNWG will discuss any modifications to the summary and vote to approve the summary.

(c) Agenda Updates for December 2009

(3) Opportunity for Reports on Related Activities

The USNWG is working to harmonize, wherever possible, with related standards to encourage uniformity and to avoid contradictory requirements and trade barriers for U.S. industry. The USNWG Subcommittees will receive updates on work by organizations such as ASTM, CaFCP, DMS, NHA, OIML, SAE and other related activities as their work continues to progress.

(4) Development of Device Standards and Test Procedures for Commercial Hydrogen Measurement

(a) Performance Data

USNWG members agreed to forward data from performance tests conducted between August 2009 through January 2010 to Diane Lee (gloria.lee@nist.gov) and Juana Williams (juana.williams@nist.gov). Data is being gathered to further confirm at least one viable field test method and to verify the performance of hydrogen dispensers to tolerances in the proposed code. NIST continues its work to refine the guidelines for test procedures used to gather performance data. The USNWG will receive an update on the status of this project.

(b) Address Comments on Draft Hydrogen Codes/Input to the January 2010 National Conference on Weights and Measures (NCWM)

In preparation for input to the January 24-27, 2010 NCWM, the USNWG will be asked to address comments received on the draft hydrogen codes from the U. S. regional weights and measures associations that met fall 2009. Three of four regional weights and measures associations support moving the draft codes forward as voting items on the national agendas. The results are as follows:

Regional Weights and Measures Association	HB 44 Device Code	HB130 Fuel Quality	HB130 Method of Sale
Central (CWMA) IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, PR, SD, WI	Support	Support	Support
Northeastern* (NEWMA) CN, ME, MA, NH, NJ, NY, PA, RI, VT	Upgrade only to information item status. Will support the code if the proposal includes a test procedure and addresses safety	Maintain information item status	Maintain information item status
Southern*(SWMA) AL, AR, DC, DE, FL GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VI, VA, WV	Support with comments	Support, but asks for documents on the effects of constituents that exceed levels in the specification table	Support
Western (WWMA) AK, AZ, CA, CO, HA, ID, MT, NV, NM, OR, UT, WA, WY	Support the code and the collection of data	Support	Support

There were 23 comments* received from two of four regional associations that may require input from the USNWG. The reasons for these comments varied and are as follows:

- Clarify some text/terms borrowed from existing codes
- Address safety
- Provide an equipment test procedure
- Consider any limits imposed on other applications
- Select suitable corresponding terms/wording from alternative code sections
- Determine if some code sections apply to a laboratory environment
- Regroup paragraph(s) with similar technical requirement(s)

On November 13, 2009, a list containing each comment along with either a suggested response or possible action item (see Appendix C) was distributed to the USNWG for its review. The USNWG will be asked to agree on the appropriate response, where necessary, to each comment.

(c) Wholesale vs. Retail Applications (time permitting)

If time permits, the USNWG will be asked to continue its discussion on the development of requirements to address wholesale applications where a delivery is not made to the end user. Several dispenser manufacturers indicated there is a need to ensure that existing draft code requirements are not so prescriptive that most wholesale applications would have difficulty complying.

The USNWG had the opportunity to review documents that either identifies specific areas of the draft code that may not fully address wholesale applications and others that with some modification might provide guidelines or possible alternative remedies to ensure both retail and wholesale applications are addressed as follow:

- Analysis of Paragraphs That Do Not Apply to Wholesale/Bulk Deliveries (April 2009, Cohen & Boyd)

- Draft 4.1 (R/W) NIST Handbook 44 Hydrogen Gas-Measuring Devices Code with Recommendations for Retail and Wholesale (R/W) Application Requirements (June 2009)
- 2009 NIST Handbook 44 Retail/Wholesale Code Requirements (June 2009)
- HB 130 prescribes the method of sale for compressed gas cylinders in Section IV Uniform Regulations Part B. Uniform Regulation of the Method of Sale of Commodities Section 2. Non-food Products paragraph 2.16. Compressed or Liquefied Gases in Refillable Cylinders through subparagraph 2.16.3.4 (see page 123, 2009 Ed.)(June 2009)

The USNWG has acknowledged that both wholesale and retail applications are regulated by the weights and measures authority. The current draft code would be the only code available to apply to wholesale devices used in hydrogen gas deliveries. The USNWG recognized there was a greater urgency for developing requirements for retail refueling applications. In August 2009 the USNWG modified the preamble to the draft code to include the text "Requirements that apply to wholesale applications are under study and development by the U.S. National Work Group for the Development of Commercial Hydrogen Measurement Standards." In light of the differences in methodologies, units of measurement, the USNWG agreed to conduct additional research to ascertain the best approach for fully developing legal metrology requirements that apply to wholesale applications.

(5) Next Steps/Tasks

The USNWG will discuss upcoming events and the next steps in the weights and measures standards development process that may affect its work to fully develop hydrogen measurement standards and test procedures. Projects, strategies, and target dates will also be identified to ensure that the USNWG meets its goals.

(6) Next Meeting

The next tele/web conference meeting is tentatively scheduled for 3:00 p.m. – 4:30 p.m. Wednesday, January 13, 2009.

4:30 P.M. (ET) Meeting Adjourns